

What is Claimed is:

1 1. An apparatus for monitoring surface variations on a component, said
2 apparatus comprising:

3 (a) a non-vibrating capacitance probe;

4 (b) means for positioning said non-vibrating capacitance probe in

5 proximity to the component; and

6 (c) means for measuring the contact potential difference between the

7 component and said non-vibrating capacitance probe.

2. An apparatus according to Claim 1, further comprising a means for
measuring the relative motion between the component and said non-vibrating capacitance
probe.

3. An apparatus according to Claim 2, further comprising means for
regulating the relative motion between the component and said non-vibrating capacitance
probe.

1 4. An apparatus according to Claim 1, further comprising means for
2 measuring the spatial distance between the component and said non-vibrating capacitance
3 probe.

1 5. An apparatus according to Claim 1, further comprising a means for
2 supporting the component.

1 6. An apparatus according to Claim 5, wherein said means for positioning
2 said non-vibrating capacitance probe in proximity to the component is fixed relative to
3 said means for supporting the component.

1 7. An apparatus according to Claim 1, wherein said surface variation is
2 surface wear.

1 8. A process for monitoring surface variations on a component, comprising
2 the following steps:

3 (a) imparting relative motion between the component and a non-
4 vibrating capacitance probe;
5 (b) monitoring the relative motion between the component and
6 the non-vibrating capacitance probe; and
7 (c) monitoring the contact potential difference between the component
8 and the non-vibrating capacitance probe.

1 9. A process according to Claim 8, further comprising the step of monitoring
2 the distance between the said test surface and the non-vibrating capacitance probe.

1 10. A process according to Claim 9, wherein the surface variation is surface
2 wear.

254477-10733-215